

REMARKS

Claims 1-28 are now present in this application.

The Abstract, specification and claims 1-23 have been amended, and claims 24-28 have been added. Reconsideration of the application, as amended, is respectfully requested.

Information Disclosure Statements were submitted on September 25, 2000 and July 6, 2001. The first Information Disclosure Statement of September 25, 2000 has been considered by the Examiner. The second Information Disclosure Statement of July 6, 2001 had many of the same documents cited except it also included French document FR 2 707 869. These documents were from the European Search Report, a copy of which was filed with the July 6, 2001 Information Disclosure Statement. This July 6, 2001 Information Disclosure Statement was timely filed well before the February 12, 2002 mailing of the first Office Action. **Accordingly, acknowledgement of receipt of the July 6, 2001 Information Disclosure Statement, as well as consideration of the cited references, including FR 2 707 869, are respectfully requested.**

The drawings stand objected to under 37 CFR 1.83(a). However, it is respectfully submitted that the drawings do show the details of the claimed invention. One skilled in the art should appreciate how the invention operates and is arranged after a review of the drawings and disclosure. Perhaps some of the 35 USC 112, second paragraph issues have given rise to this objection, but these

issues should now be addressed. The drawings should satisfy the requirements of 37 CFR 1.83(a). Accordingly, reconsideration and withdrawal of any objection to the drawings are respectfully requested.

The disclosure and claims stand objected to for various informalities. It is noted that the instant application is a national phase of a PCT application and the abstract appears on a separate sheet in the application forwarded both by the International Bureau and the undersigned. Nonetheless, the foregoing amendments to the Abstract should also result in an Abstract on a separate sheet of paper. In view of the foregoing amendments, reconsideration and withdrawal of the objections to the disclosure and claims are respectfully requested.

In the foregoing objection to the disclosure, the Examiner questioned the document on page 4 of the specification. The WO publication number has now been inserted into the specification and a copy of this document is attached for the Examiner's consideration. This WO document has now become a pending U.S. application which is also being supplied to the Examiner in a separate letter filed simultaneously herewith.

Claims 8-23 stand rejected under 35 USC 112, second paragraph. This rejection is respectfully traversed.

In view of the foregoing amendments to the claims, it is respectfully submitted that the claims particularly point out and

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distinctly claim the subject matter of the instant invention. Accordingly, reconsideration and withdrawal of the 35 USC 112, second paragraph rejection are respectfully requested.

Claims 1-18 stand rejected under 35 USC 103 as being unpatentable over LOHN, U.S. Patent 4,944,675, in view of MILAM, U.S. Patent 5,551,845. This rejection is respectfully traversed.

It is respectfully submitted that, by combining the teachings of the references utilized by the Examiner, one would arrive at a prior art system exactly as that explained on page 1, line 7 of the present specification. In other words, one would obtain a very bulky, complicated and expensive stationary system comprising a pressure tank (item 14 of MILAM), liquid separators (DR in Milam), valves (item 70 in MILAM), etc. Furthermore, the compressor disclosed by MILAM has only a single, large cylinder producing compressed air (see column 5, lines 1-3, for example). This means that the outlet from this cylinder could not be directly connected to a dental tool as that disclosed by LÖHN without using an intermediate pressure tank and an air pressure control device of some type.

Independent claim 1 of the present application claims a method wherein a second end of the tubular body is connected directly (i.e., without a pressure tank with a pilot valve, etc.) to a gas outlet of a gas compressor, which is a piston compressor having a plurality of cylinders, so as to obtain a substantially uniform flow. The capacity of the gas compressor is selected so as to

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obtain through said open free end of the tubular body a desired gas flow rate being a flow of air used by a dentist for cleaning the teeth of a patient. This means that the operation of the compressor is started when the gas flow should be started, and stopped when the gas flow should be stopped. This is a complete breach with conventional thinking, allowing the use of a very small, lightweight compressor suitable for use in a mobile dentist's clinic.

In addition, independent claim 8 of the present application claims an apparatus comprising a piston compressor having a plurality of pistons and cylinders, and a tubular body in the form of a dentist's tool for cleaning teeth, the tubular body having a second opposite end part communicating directly with the gas outlet of the compressor, the capacity of the compressor being such that a desired gas flow through the open first end part is obtained when the gas compressor is operating.

Accordingly, it is respectfully submitted that the method and apparatus for selectively generating a flow of gas from an open first end of a tubular body as disclosed in independent claims 1 and 8 of the present invention, as well as their dependent claims, are neither taught nor suggested by the prior art utilized by the Examiner. Reconsideration and withdrawal of the 35 USC 103 rejection are respectfully requested.

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Applicant gratefully acknowledges that the Examiner considers the subject matter of claims 19-23 to contain allowable subject matter. In view of the foregoing amendments and remarks, it is respectfully submitted that all claims should now be in condition for allowance. Favorable reconsideration and an early Notice of Allowance are therefore earnestly solicited.

Because the additional prior art cited by the Examiner has been included merely to show the state of the prior art and has not been utilized to reject the claims, no further comments concerning these documents are considered necessary at this time.

In the event that any outstanding matters remain in this application, the Examiner is invited to contact the undersigned at (703) 205-8000 in the Washington, D.C. area.

**Attached hereto is a marked-up version of the changes made to the application by this Amendment.**

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), the Applicant respectfully petitions for a three (3) month extension of time for filing a response in connection with the present application and the required fee of \$920.00 is attached herewith.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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Attachment: Version with Markings to Show Changes Made

(Rev. 02/20/02)

**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE ABSTRACT OF THE DISCLOSURE:**

The Abstract of the Disclosure has been amended as follows:

--ABSTRACT OF THE DISCLOSURE

A flow of gas through a tubular body [(13, 14)] is provided selectively by connecting the tubular body directly to a gas outlet of a gas compressor [(10)] without any intermediate compressed air container. The operation of the compressor is started when the gas flow is to be initiated, and the gas flow is stopped by stopping the operation of the compressor. The tubular body or nozzle may [comprise] include a wall part made from a resilient material. The open free end of the tubular body may then be at least partly closed and subsequently reopened while the compressor [(10)] is still operating, so as to temporarily expand the resilient wall part. Thereby, a pressure pulse may be generated. The air flow may be used by a dentist for cleaning teeth.--

**IN THE SPECIFICATION:**

A heading has been added before the paragraph beginning in page 1, line 4.

A heading has been added before the paragraph beginning on page 1, line 7.

A heading has been added before the paragraph beginning on page 1, line 14.

A paragraph and heading have been added after the paragraph ending on page 4, line 12.

The paragraph beginning on page 4, line 14, has been amended as follows:

--The invention will now be further described with reference to the drawings, which are given by way of illustration only, and thus are not limitative of the present invention, and wherein:--

A heading has been added before the paragraph beginning on page 4, line 24.

The paragraph beginning on page 4, line 28, has been amended as follows:

--The apparatus shown in Fig. 1 comprises a piston compressor 10 comprising a suitable number of cylinders. In the present case four cylinders are arranged on either side of a common crank shaft. The shaft of a brushless DC electric motor 11 is connected to the crank shaft, e.g. by means of a coupling device as that described in [a Danish patent application (filed at the same time as the present application, our ref. 21121DK1)] WO 99/48614. The manifold tubes 12 of the compressor are connected to a hose 13 having a nozzle 14 formed at its free end. A liquid pump 15 is driven by an electric motor 16 which may correspond to the electric motor 11, and the outlet of the pump 15 is connected to a tube 17 having a free end opening into the free end or nozzle of the hose 13, [vide] see Fig. 2.--

The paragraph beginning on page 5, line 16, has been amended as follows:

--When the switch 22 is depressed, the electric motor 11 is started so that a flow of air or gas through the hose 13 and out from the opening of the nozzle 14 is generated. The air flow may be stopped by [the] depressing the switch 22 once again so as to stop

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the electric motor 11 and the compressor 10. Similarly, a flow of water or another liquid may be generated by depressing the switch 23 whereby the electric motor 16 is started. It is also possible to depress the switches 22 and 23 at the same time so as to generate a flow of air and water or another liquid. The rate and force of the flows generated correspond to the capacity of the compressor 10 and the liquid pump 15, respectively.--

A paragraph has been added after the paragraph ending on page 6, line 25.

IN THE CLAIMS:

The claims have been amended as follows:

1. (Amended) A method for selectively generating a flow of gas from [a] an open first end of a tubular body, said method comprising:

connecting a second end of the tubular body directly to a gas outlet of a gas compressor, which is a piston compressor having a plurality of cylinders, the capacity of the gas compressor being selected so as to obtain through said open free end of the tubular body a desired gas flow rate being a flow of air used by a dentist for cleaning the teeth of a patient,

starting the operation of the compressor so as to start the gas flow, and

stopping the gas flow by stopping the operation of the compressor.

2. (Amended) [A] The method according to claim 1, wherein the compressor is driven by an electric motor, the operation of the electric motor being started and stopped by actuating a switch

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positioned on the tubular body at or adjacent to its first open end so as to control power supply to the electric motor.

3. (Twice Amended) [A] The method according to claim 1, wherein the tubular body comprises a wall part being made from a resilient material, the open first end of the tubular body being at least partly closed and subsequently reopened while the compressor is still operating, so as to temporarily expand the resilient wall part, whereby a pressure pulse may be generated.

4. (Amended) [A] The method according to claim 3, wherein the wall part defining the open first end of the tubular body or being adjacent thereto is made from a resilient material, the open first end of the tubular body being at least partly closed by compressing said resilient wall part.

5. (Twice Amended) [A] The method according to claim 1, wherein liquid is selectively introduced into the open first end [part] of the tubular body forming a nozzle.

6. (Amended) [A] The method according to claim 5, wherein liquid is introduced into the tubular body when the gas compressor is operating.

7. (Amended) [A] The method according to claim 5, wherein the liquid is sprayed out from the open first [free] end of the tubular body when the gas compressor is not operating.

8. (Amended) An apparatus for selectively producing a gas flow, said apparatus comprising:

a gas compressor, which is a piston compressor having a plurality of pistons and cylinders and a gas inlet and a gas outlet,

an electric motor for driving the gas compressor,

means for switching the electric motor on and off, and

a tubular body [of the type used by dentists] in the form of a dentist's tool for cleaning teeth, said tubular body having an open first end part and a second opposite end part communicating directly with the gas outlet of the compressor, the capacity of the compressor being such that a desired gas flow through the open first end part is obtained when the gas compressor is operating.

9. (Amended) [An] The apparatus according to claim 8, wherein the means for switching [means] is positioned on the tubular body at or adjacent to the open first end part of the tubular body.

10. (Twice Amended) [An] The apparatus according to claim 8, wherein the tubular body comprises at least one resilient wall part, and manually operateable means [being provided] for selectively closing the open first end part of the tubular body at least partly.

11. (Amended) [An] The apparatus according to claim 10, wherein at least the open first end part of the tubular body is made from a resilient material.

12. (Amended) [An] The apparatus according to claim 11, further comprising an outer tube section made from a stiff material and surrounding the open first end part of the tubular body, the manually operateable [operateably closing] means being mounted on the outer tube section.

13. (Twice Amended) [An] The apparatus according to claim 11, wherein the means for switching [means] comprises a microswitch embedded in the resilient wall part of the open first end part of the tubular body, the means for switching [means] being actuated when the manually operateable means are operated so as to at least partly compress and close the open first end part of the tubular body.

14. (Twice Amended) [An] The apparatus according to claim 8, further comprising a liquid delivery tube opening into the open first end part of the tubular body, and means for selectively delivering liquid into the open first end part of the tubular body via the delivery tube.

15. (Amended) [An] The apparatus according to claim 14, wherein the means for selectively delivering liquid [delivery means] comprise a liquid pump and an electric motor for driving the pump, the operation of the electric motor driving the pump being controlled by a switch [means] arranged at or adjacent to the open first end part of the tubular body.

16. (Twice Amended) [An] The apparatus according to claim 14, wherein [the] an open end of the liquid delivery tube is directed towards the open end of the tubular body.

17. (Twice Amended) [An] The apparatus according to claim 8, wherein the tubular body is in the form of a hose of a resilient material.

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18. (Twice Amended) [An] The apparatus according to claim 8, wherein the electric motor is a brushless DC-motor.

19. (Twice Amended) [An] The apparatus according to claim 8, wherein the piston compressor comprises a crank shaft comprising crank sections interconnected with said pistons, adjacent crank sections being flexibly interconnected by a flexible coupling device.

20. (Amended) [An] The apparatus according to claim 19, wherein the coupling device comprises a tubular member formed by a helically wound thread or wire, opposite ends of the tubular member[s] being connected to adjacent, substantially aligned shaft ends of said crank sections.

21. (Amended) [An] The apparatus according to claim 20, wherein said opposite open ends of the tubular member are open ends adapted to receive and surround said respective shaft ends.

22. (Amended) [An] The apparatus according to claim 21, wherein at least one of the opposite ends of the tubular member is adapted to frictionally engage with the peripheral surface of the respective shaft end.

23. (Twice Amended) [An] The apparatus according to claim 20, wherein a free end of the thread or wire extends transversely into at least one of said opposite ends of the tubular member and is received in a slot or recess formed in the corresponding shaft end.

Claims 24-28 have been added.